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# CHAPTER 13

## **CALTRANS HEARING PROTECTION PROGRAM**

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## **13.00 INTRODUCTION**

The Department's Hearing Protection Program (HPP) is designed to protect employees from hearing loss through the introduction of engineering controls, implementation of administrative controls, or through the use of personal protective equipment (PPE).

### **13.01 PURPOSE**

Provide guidance for the implementation of a HPP based on the California Occupational Safety and Health Administration (Cal-OSHA) regulations.

### **13.02 POLICY STATEMENT**

Employees that work in areas where the probable exposure to noise levels may equal or exceed an 8-hour time-weighted average sound level of 85 decibels (dB) shall be tested and enrolled in the Department's HPP.

### **13.03 Cal-OSHA REQUIREMENTS**

The General Industry Safety Orders (GISO), Control of Noise Exposure, covered under Sections 5095 through 5100, and Section 1521 of the Construction Safety Orders (CSO) require the Department to administer a hearing protection program.

The regulations mandate that engineering controls are the first priority, followed by administrative controls, and then through the use of PPE. These controls are described in priority order as follows:

- 1. Engineering Controls-** Includes barriers, damping, isolation, muffling, noise abortion, mechanical isolation, variations in force, pressure or driving speed and combinations of these. Changes in the machinery, the way the machine operates, or the design of the structure in which the machinery is housed can control noise.
- 2. Administrative Controls-** The choice of administrative controls used is governed by the particular noise control problem encountered. These controls may involve assigning work to quieter areas where the average employee daily exposure is less than 85 dB.
- 3. PPE-** When engineering and/or administrative controls fail to reduce noise to within required limits or are not technologically feasible, earplugs and/or earmuffs must be used. The Department provides all hearing PPE.

**Note:** a combination of the above controls may be necessary to reduce noise at an acceptable level.

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### 13.04 ROLES AND RESPONSIBILITIES

The Headquarters Office of Health and Safety is responsible to:

- Administer the Caltrans HPP by providing statewide policy and direction;
- Identify the work activities that expose employees to noise levels that equal or exceed the Cal-OSHA dB standard and require audiogram testing. Results of noise level measurements are used to identify work activities and associated civil service classifications for enrollment into the HPP;
- Provide information regarding identified work activities and classifications requiring enrollment into the HPP to District Safety and Health Officers, managers, supervisors, and others.
- Conduct periodic inspections to monitor work activities and new equipment to determine if exposure to noise levels may equal or exceed the Cal-OSHA dB standard;
- Evaluate classifications for inclusion in the HPP; and
- Develop, administer, and maintain T4T (Training for Trainers) that ensures compliance with Cal/OSHA hearing conservation requirements.

The Office of Personnel Operations (District) shall:

- Ensure that all prospective hires be directed to utilize only the audiometric facilities identified by the District Safety Office for conducting base line audiometric evaluations and maintain employee medical files, including records of baseline audiometric testing.
- When requested provide District Safety Officer with copies of baseline audiometric evaluations of employees enrolled in the Departments' HPP.

District Health and Safety Officers are responsible to:

- Inform managers and supervisors about HPP requirements. Assist supervisors with ensuring those employees in identified activities/classifications are enrolled in the HPP;
- Conduct periodic inspections to monitor work activities and new equipment to determine if exposure to noise levels may equal or exceed the Cal-OSHA dB standard; Determine with advice from Headquarters Health and Safety office, if employees exposed to noise exceeding the Cal-OSHA standard should be enrolled in the HPP or whether engineering/administrative controls can be applied to reduce noise levels;

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- Provide information to managers and supervisors regarding engineering controls, administrative controls, and PPE (consistent with changes in protective equipment and processes);
  - Identify licensed or certified audiologist, physician, or certified audiometric technicians within the District so supervisors can send their employees who are enrolled in the Departments HPP for annual audiometric evaluations;
  - Provide a copy to supervisors of the AUDIOMETRIC EVALUATION, Form PM-S-0003 for employees scheduled for an audiogram;
  - Maintain all annual audiometric testing records for employees enrolled in the HPP;
  - Provide required audiogram/exposure records, upon request, to employees, former employees, and representatives designated by the individual employee, or authorized representatives of Cal-OSHA, as required by GISO Section 5100(e) and
  - Ensure that a copy of Article 105, Control of Noise Exposure, from the GISO, is made available upon request to affected employees or their representative(s). A copy shall be posted at each workplace (see Section 5099[b][1]) where employees in identified classifications are enrolled in the HPP.

Managers and Supervisors are responsible to:

- Ensure that employees in identified work activities or classifications are enrolled in the HPP\* and receive annual audiometric testing from a licensed or certified audiologist, physician, or certified audiometric technician as identified by the District Safety Office.
- Maintain copies of noise exposure measurement records. (Forward all audiogram testing documentation to the District Safety Office);
- Ensure that employees receive training regarding the effects of noise on human hearing when initially enrolled and annually thereafter;
- Provide ear plugs and/or ear muffs and make available as needed a variety of suitable hearing protection equipment to employees;
- Request periodic inspections to monitor work activities and new equipment to determine if exposure to noise levels may equal or exceed the Cal-OSHA dB standard. Notify employees prior to performing a noise assessment and any finding that may affect them;

- Transfer all valid exposure records to an employee's receiving supervisor when an employee enrolled in the HPP is transferred to a new District / Headquarters'.

\*To aid managers/supervisors in determining if an employee may be subject to the HPP, the following list illustrates various noise levels that individuals may encounter:

140 dB	Jet airplane taking off at 50 feet
130 dB	Approximate threshold of pain in human ear
120 dB	Jet airplane takeoff at 200 feet
115 dB	Brush chipper
110 dB	Chain saw
100 dB	Snow blower
90 dB	Paving machine
85 dB	Freeway noises
80 dB	Riding in vehicle, window down
70 dB	Conversation at 1 foot
60 dB	Conversation at 3 feet
50 dB	Business office, typical home
40 dB	Outside noise, quiet residential area

### 13.05 ENROLLMENT AND CLASSIFICATIONS

The Headquarters Office of Health and Safety is continuously evaluating what classifications may need to be added for mandatory enrollment in the Department's HPP. As of this revision date, the following classes shall be enrolled in the program:

<b>Class Code</b>	<b>Class Title</b>
6378	Heavy Truck Driver *
6514	Lead Structural Steel Painter
6517	Structural Steel Painter
6519	Structural Steel Painter - Apprentice
9381	Tree Maintenance Worker
9382	Tree Maintenance Leadworker, Caltrans
Varies	Vactor Crews

- This identified class covers only Transport Drivers whose responsibilities are loading, unloading and transporting of heavy equipment.

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**13.06 AUDIOMETRIC TESTING PROCEDURES**

The District Safety Office shall establish, within the District, adequate facilities to conduct baseline and annual audiometric evaluations. Supervisors are responsible to arrange for employees enrolled in the HPP to attend an audiometric evaluation annually. A licensed or certified audiologist, physician, or certified audiometric technician shall conduct audiometric testing. The audiometric examination shall be administered in accordance with the American Medical Association Current Procedural Terminology Coding Manual (CPT-4), Number 92552, defined as "pure tone audiometry (threshold) air only."

Audiometric testing shall be conducted in accordance with GISO Section 5097, HEARING CONSERVATION PROGRAM. Specific audiogram tests shall comply with Section 5097(c) Audiometric Testing Program, 5097(d) Evaluation of Audiogram, and 5097(e) Audiometric Test Requirements, and Appendix A - F.

A sample of the AUDIOMETRIC EVALUATION, Form PM-S-0003, is included at the end of this chapter.

**13.07 TRAINING**

Supervisors shall ensure that each employee receives training when initially enrolled in the program and annually thereafter. Training shall include:

- The effect of harmful exposure to various noise levels on human hearing;
- The purpose, advantages, and disadvantages of hearing protection devices;
- The purpose of annual testing and an explanation of the testing procedures; and
- Instructions on selection, fitting, and the use and care of hearing protectors.

Note: Headquarters Safety will provide a T4T for the HPP. Each District should send an adequate number of staff to meet the needs of the District.

**13.08 RECORD KEEPING**

Employee audiogram information shall be retained in District Health and Safety Offices for the duration of employment and shall include:

- Name and job classification of the employee;
- Date of audiogram;
- Examiner's name;
- Date of last calibration of the audiometer; and
- Employee's most recent noise exposure assessment, if available.

All supplemental noise exposure measurement records shall be retained in supervisor's files for two (2) years. GISO Section 5100(e) requires that hearing records shall be provided upon request

to employees, former employees, and/or representatives designated by individual employees, or authorized representatives.

NOTE: Supervisors should retain copies of noise exposure measurement records for their own files, *and* forward all audiogram records to their District Health and Safety Office.

### **13.09 DEFINITIONS AND TERMINOLOGY**

**Action Level** - The GISO has established an 8-hour time-weighted average (TWA) of 85 dB as the point when the employer must enroll employees in a hearing conservation program.

**Administrative Controls** - Management may limit workplace noise exposure through the rotation of personnel or reducing employee time in a noisy environment. This may also include mandating the use of personal protective devices.

**Hertz (Hz)**- The unit of measurement of frequency, numerically equal to cycles per second.

**Audible Range** - The range in cycles per second (20-20,000 Hz) that the human ear can hear.

**Audiogram** - Recorded results of an audiometric examination.

**Audiometric Examination** - Hearing test conducted by or under the supervision of a licensed physician or audiologist.

**Baseline Audiogram** - The initial audiogram against which all future audiograms are to be compared.

**Engineering Controls** - Management-initiated physical measures or devices installed on equipment or in the work environment that will reduce workplace noise levels to acceptable limits.

**Calibrate** - The procedure used to check an audiometer for uniformity or accuracy.

**Decibel (dB)** - A unit for expressing the relative intensity of sound.

**Exposure Measurement Record** - Required whenever information indicates that any employee's exposure may equal or exceed an 8-hour time-weighted average of 85 dB.

**Frequency** - The number of sound vibrations per second Hz or cycles per second.

**Sound Level Meter** - An instrument for the measuring of sound.

**Standard Threshold Shift** - A confirmed change in hearing relative to the baseline audiogram of an average of 10 dB or more at 2,000, 3,000, and 4,000 Hz in either ear.

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**Speech Frequencies** - The range in cycles per second (500-4,000 Hz) at which normal speech can be heard.

**Sound** - The sensation produced through the organs of hearing by vibrations transmitted in a material medium, usually air.

**Temporary Threshold Shift** - A change in hearing relative to the baseline audiogram of an average of 10 dB or more at 2,000, 3,000, and 4,000 Hz in either ear, caused by exposure to loud noise prior to an audiometric examination. Example: rock concert the night before, cutting wood with a chain saw, etc.

**Threshold** - The point at which a tone just becomes audible to a person.

**Time Weighted Average (TWA)** - The average exposure to noise over an 8-hour work shift, as determined by actual noise level samples taken during the work shift.

### 13.10 PRE-EMPLOYMENT AUDIOGRAM

The pre-employment audiogram process is for prospective employees; whereas, the HPP is designed for permanent employees. Prospective employees who are required to have a pre-employment physical and an audiogram to establish a baseline hearing record are not included in the Department's HPP.

The pre-employment audiogram testing process is not based on Cal-OSHA regulations, but on departmental policy. This process is designed to establish a hearing record for prospective employees that can be used in support of and/or in defense of future workers' compensation claims for alleged hearing loss.

Audiogram testing for pre-employment physicals is to be conducted as described in 13.06, Audiometric Testing Procedures.

Contact the Headquarters or District Office of Health and Safety for additional information.



**AUDIOMETRIC EVALUATION****FORM PM-S-0003**

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

**AUDIOMETRIC EVALUATION FORM**

PM-S-0003 (REV. 5/98)

**PERSONAL INFORMATION NOTICE**

Pursuant to the Federal Privacy Act (P.L. 93-579) and the Information Practices Act of 1977 (Civil Code Sections 1798, et seq.), notice is hereby given for the request of personal information by this form. The requested personal information is voluntary. The principal purpose of the voluntary information is to facilitate the processing of this form. The failure to provide all or any part of the requested information may delay processing of this form. No disclosure of personal information will be made unless permissible under Article 6, Section 1798.24 of the IPA of 1977. Each individual has the right upon request and proper identification to inspect all personal information in any record maintained on the individual by identifying particular. Direct any inquiries on information maintenance to your IPA Officer.

This information is required for all State-provided audiograms.

Shaded area to be filled out by physician/audiologist.

All other information to be supplied by employee - Please print.

EMPLOYEE LAST NAME	FIRST NAME	M.I.	DISTRICT	UNIT
SOCIAL SECURITY #	CHECK SECTION	DATE OF BIRTH	SEX	

RIGHT EAR							LEFT EAR						
500	1000	2000	3000	4000	5000	6000	500	1000	2000	3000	4000	5000	6000
							LEFT						

**Please answer the questions below:**

- Have you ever had a head injury with unconsciousness? ☐ YES ☐ NO
- Have you ever had severe dizziness? ☐ YES ☐ NO
- Have you ever had ear surgery? ☐ YES ☐ NO
- Have you ever had severe ear infections? ☐ YES ☐ NO
- Have you ever had exposure to noise in previous jobs? ☐ YES ☐ NO
- Have you ever had exposure to noise in military service? ☐ YES ☐ NO
- What Branch: ☐ Army ☐ Navy ☐ Air Force ☐ Marines ☐ Other ☐ YES ☐ NO
- Were you in combat? ☐ YES ☐ NO
- Do you participate in noisy hobbies (motorcycles, firearms)? ☐ YES ☐ NO
- All jobs included, how many years have you worked in noise?
- Do you wear a hearing aid? ☐ LEFT ☐ RIGHT ☐ BOTH ☐ NO
- Do you have a cold? ☐ YES ☐ NO
- Are you taking antibiotic? ☐ YES ☐ NO
- Do you have ear drainage or pain? ☐ LEFT ☐ RIGHT ☐ BOTH ☐ NO
- Do you have a perforated ear drum? ☐ LEFT ☐ RIGHT ☐ BOTH ☐ NO
- Do you have ringing in your ears? ☐ LEFT ☐ RIGHT ☐ BOTH ☐ NO
- Do you have known hearing loss? ☐ LEFT ☐ RIGHT ☐ BOTH ☐ NO
- At the end of your shift do your ears ring? ☐ YES ☐ NO
- Did you work in noise today? ☐ YES ☐ NO
- Did you use hearing protection? ☐ YES ☐ NO

I certify that the above statements and answers to the above questions are accurate to the best of my knowledge and that the results of my hearing test may be used to carry out a hearing conservation program.

EMPLOYEE SIGNATURE	DATE
NAME OF AUDIOMETRIC EXAMINER	DATE OF LAST ACOUSTIC OR EXHAUSTIVE CALIBRATION OF AUDIOMETER